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### <sup>1</sup> SPAM: a microcode based tool for tracing operating system events

Stephen W. Melvin, Yale N. Patt

December 1987 **Proceedings of the 20th annual workshop on Microprogramming**

Full text available:  pdf(405.55 KB)    Additional Information: [full citation](#), [abstract](#), [references](#), [citings](#), [index terms](#)

We have developed a tool called SPAM (for System Performance Analysis using Microcode), based on microcode modifications to a VAX 8600, that traces operating system events as a side-effect to normal execution. This trace of interrupts, exceptions, system calls and context switches can then be processed to analyze operating system behavior for the purpose of debugging, tuning or development. SPAM allows measurements to be made on a fully operating UNIX system with little perturbation (typical ...

## <sup>2</sup> A comparison of system monitoring methods, passive network monitoring and kernel instrumentation

A. W. Moore, A. J. McGregor, J. W. Breen

January 1996 **ACM SIGOPS Operating Systems Review**, Volume 30 Issue 1

Full text available:  pdf(1.89 MB) Additional Information: full citation, abstract, index terms

This paper presents the comparison of two methods of system monitoring, passive network monitoring and kernel instrumentation. The comparison is made on the basis of passive network monitoring being used as a replacement for kernel instrumentation in some situations. Despite the fact that the passive network monitoring technique is shown to perform poorly as a direct replacement for kernel instrumentation, this paper indicates the areas where passive network monitoring could be used to the great ...

### <sup>3</sup> A microcode-based environment for noninvasive performance analysis

S. W. Melvin, Y. N. Patt

December 1986 **ACM SIGMICRO Newsletter**, Proceedings of the 19th annual workshop on Microprogramming, Volume 17 Issue 4

Full text available:  pdf(757.28 KB)    Additional Information: [full citation](#), [abstract](#), [references](#), [citings](#), [index terms](#)

We have developed an environment which allows us to collect data for performance analysis by modifying the microcode of a VAX 8600. This use of microprogramming permits data to be collected with minimal system perturbation (i.e. the data is almost as good as that obtained with a hardware monitor) but at the cost and with the ease of use of a software simulator. In this paper we describe the environment that we have developed and present two examples of its use. The first example, procedure ...

**9 Performance analysis using a non-invasive instruction trace mechanism***Sandon, P.A.; Yuchung Liao;*Performance, Computing, and Communications Conference, 1997. IPCCC 1997.,  
IEEE International , 5-7 Feb. 1997

Pages:308 - 314


[\[Abstract\]](#)   [\[PDF Full-Text \(592 KB\)\]](#)   **IEEE CNF**

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## Reconciling System Requirements and Runtime Behavior

M. S. Feather, S. Fickas, A. Van Lamsweerde, C. Ponsard

April 1998 **Proceedings of the 9th International Workshop on Software Specification and Design**

Full text available:  [pdf\(56.51 KB\)](#)



[Publisher Site](#)

Additional Information: [full citation](#), [abstract](#), [citations](#)

This paper considers the problem of runtime system deviations from requirements specifications. Such deviations may arise from lack of anticipation of possible behaviors of environment agents at specification time, or from evolving conditions in this environment. We discuss an architecture and a development process for monitoring system requirements at runtime to reconcile the requirements and the system's runtime behavior. This process is deployed on three scenarios of requirements-execution rec ...

**Keywords:** Self-adapting systems, requirements monitoring, goal-driven requirements engineering, inconsistency management, obstacles, deviation analysis, system customization.